CLAIMS:

1.   A robot for vacuum cleaning surfaces, which robot is provided with a housing, a suction unit accommodated in said housing, a suction nozzle mounted to the housing, which suction nozzle is situated, during operation, close to a surface to be vacuum cleaned, a motor-drivable wheel system by means of which the housing can be displaced over the surface to be cleaned, and an electrical control member for controlling a displacement of the housing to be generated by means of the wheel system, characterized in that the displacement controlled by the control member comprises a substantially cycloid movement that is brought about by a rolling motion of an imaginary rolling circle along an imaginary line of displacement of the housing over the surface to be cleaned, the suction nozzle being eccentrically arranged with respect to the rolling circle, which rolling circle extends parallel to the surface to be cleaned and is fixed with respect to the housing.

2.   A robot as claimed in claim 1, characterized in that the wheel system comprises at least three wheels arranged at regular intervals in accordance with an imaginary base circle, each wheel having a wheel axle extending in accordance with a radial of the base circle and being drivable by means of a separate motor, and each wheel being provided, along its circumference, with a number of rolls each having a roll axle extending in a tangential direction with respect to the wheel axle of the relevant wheel.

3.   A robot as claimed in claim 2, characterized in that the rolling circle is concentric with the base circle, while the radius of the rolling circle is at the most equal to approximately $W_S/2\pi$, where W_S is a main dimension of the suction nozzle, measured along a radial of the base circle.

4.   A robot as claimed in claim 3, characterized in that the suction nozzle extends, viewed along said radial of the base circle, substantially up to said base circle.

5.   A robot as claimed in claim 3, characterized in that the radius of the rolling circle is smaller than approximately $0.16.R_B$, where R_B is the radius of the base circle.